

Teacher's notes

Animal survivor!

Focus for learning

Students analyse an animal to relate its features to its survival success in the current environmental conditions. Students then make predictions about how the animal may survive if conditions were to change.

What is the most important change you could make to either the animal or its ecosystem to increase the chances of its survival?


Analysis of adaptations of creatures to their environments

- a. Specimen analysis
- b. Relate features to:
 - i. Feeding
 - ii. Protection from natural predators
 - iii. Protection from environmental factors (including human and feral populations)

Design a creature suited to particular environmental factors:

- a. Food sources
- b. Predators and competitors
- c. Abiotic conditions
- d. Human and feral impacts



Phase	Activity	Process
Introduction	Setting the scene: Why is this important?	1. What's happening to the animals? Some local stories.
Modelling	Model process: How to look closely. 	2. Whole group discussion using a feature animal to model the process of looking closely and making judgments.
1.	Looking closely: Analysis of how creatures survive in their environments	3. What animal is that? Identify animal 4. Where does it live? Describe habitat 5. Specimen analysis sheet (#1): focus on structures relating to: <ul style="list-style-type: none"> • Food sources and competition for feeding • Protection from natural predators • Protection from environmental factors: <ul style="list-style-type: none"> ○ Abiotic conditions ○ Human impacts and feral populations
2.	Judging success:	6. How successful is your animal at surviving its environment?
	Checkpoint:	7. What are the main threats to its survival?
		8. Share your ideas with the group.
3.	Making changes: imagine you could redesign or add improvements to your animal.	9. What would you change to improve your animal's chance of survival? Consider: <ul style="list-style-type: none"> a. Natural factors b. Human impacts 10. Draw a picture showing the features you would change.
4.	Predicting success: Justifying your changes	11. How well do you think your animal would survive if these changes could really be made? Why?
5.	Sharing ideas: arguing your case	12. Prepare to present your ideas to the group.

Environmental factors

	Current	Future changes
Climate	Inland type: <ul style="list-style-type: none"> • Wet summer and low winter rainfalls; • hot days and cool nights 	<ul style="list-style-type: none"> • Less rainfall in summer • Warmer days
Abiotic factors		<ul style="list-style-type: none"> • Increase in average temperature • Reduction in rainfall • Increases water losses due to increase in evaporation
Habitat	<ul style="list-style-type: none"> • Open forest • Grasslands • Rivers have good flows during the 'wet' but reduced flowing during 'dry' season • Mix of acacias and eucalypts along river banks • Swamp lands with adequate water • 	<ul style="list-style-type: none"> • Trees die due to lack of water • River flows stop during 'dry' • Grasslands reduce due to reduced rainfall • Noxious weeds increase due to better suitability to conditions and reduced competition from grasses • Some swamp lands reduce to mud bowls others dry completely

Animal survival

1. How will your animal survive these changes?
2. What feature of your animal would be most important in helping it to survive under these conditions?
3. What will happen to your animal's population during this time?
4. Would happen if this change continued?

Essential learnings:

Knowledge and Understanding: concepts, facts and procedures

Year 5

Students relate science to their own experiences and activities, and consider how decisions are made about science.

They know and understand that:

- science enables them to make sense of aspects of their life
- sustainability of natural, social and built environments is influenced by human activities.

Students understand that science is a body of knowledge based on observations of, and inferences from, the natural and physical world, and that it is subjective and evolving.

They know and understand that:

- living things can be grouped according to their observable characteristics
- structures of living things have particular functions
- different environments support different living things
- weathering and erosion cause changes to the surface of the Earth.

Year 7

Students consider and respond to decisions about science and its impact on people, their environment and their communities.

They know and understand that:

- scientific understandings influence the way people live, and have changed over time
- sustainability of natural, social and built environments is promoted at local and global levels by resource management

Students understand that science is a body of knowledge developed through observations of, and inferences from, the natural and physical world, and that its facts, theories and laws are not fixed.

Year 9

Students understand that applying scientific knowledge enables them to make responsible and informed decisions about real-world issues.

They know and understand that:

- immediate and long-term consequences of human activity can be predicted by considering past and present events
- values and ethics influence the ways that science is applied
- sustainable practices applied to natural, social and built environments may be informed by scientific responses (e.g. renewable energy)
- people from diverse cultures contribute to and shape the development of science.

Students understand that science is a body of knowledge developed through human observation and inference, and that its facts, theories and laws are subject to change.

They know and understand that:

- complex organisms depend on interacting body systems to meet their needs
- organisms and their environments are interdependent